

**OKLAHOMA
CORPORATION COMMISSION**

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OIL & GAS CONSERVATION DIVISION



Tim Baker, Director

TO:

FROM: Tim Baker, Director, Oil and Gas Conservation Division

RE: Reduction in Volumes for Wells Located in Area of Interest for Induced Seismicity

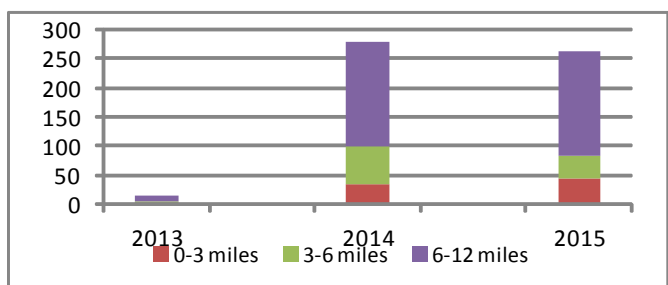
DATE: November 19, 2015

The Commission's Oil and Gas Conservation Division (OGCD) is expanding its efforts to reduce the risk of earthquakes potentially triggered by saltwater disposal wells. The following addresses the reduction of volumes being disposed in the Arbuckle formation within the defined area of interest. Any company that has been identified as operating one or more Arbuckle disposal well(s) located within one of the three zones in the defined area will need to reduce volumes disposed into such well(s) according to the schedule outlined at the end of this letter. The zones are shown on the attached map and are defined from the center point of the recent magnitude 4.0 earthquake, as reported by the Oklahoma Geological Survey (OGS), near the town of Crescent, as follows:

- Zero to three miles (0-3 miles)
- Three to six miles (3-6 miles)
- Six to ten miles (6-10 miles)

The area highlighted on the attached map has been designated based upon the dramatic increase in earthquakes within the immediate area. The OGCD has reviewed the earthquake activity of magnitude 2.5 and greater within two miles of the zones of interest, as reported by the Oklahoma Geological Survey (OGS). The earthquake activity from January 1, 2013 through November 19, 2015 is shown below. The attached map shows earthquake activity of the last 30 days.

Earthquake Activity Magnitude 2.5 or Greater				
Year	0-3 miles	3-6 miles	6-12 miles	Total
2013	0	3	13	16
2014	33	65	182	280
2015	45	38	179	262



As part of a joint effort to decrease the risk of induced seismicity, you will need to complete reduction of disposal volumes in accordance with the following schedule and as indicated for the wells below. All disposal well volumes shall be calculated on a daily basis. In addition, gauges and flow meters should be placed on such wells on or before Monday, December 7, 2015 so that Commission Field Inspectors can verify pressures and volumes. As has been the practice, pressures and volumes for such wells should continue to be supplied every Monday to the Commission, on a weekly basis, at ogvolumes@occemail.com.

The following schedule applies to all wells within the defined zones in the Area of Interest:

- Zero to three miles (0-3 miles):
 - A shut-in of wells on or before November 26, 2015.
- Three to six miles (3-6 miles): Fifty percent reduction (50%).
 - On or before December 3, 2015, daily volumes should be reduced by twenty-five percent (25%) of the daily average of the total volume reported reported to the Commission on the weekly volume reports through November 18, 2015.
 - On or before December 17, 2015, daily volumes should be reduced by an additional twenty-five percent (25%), for a total volume reduction of twenty-five percent (50%) of the daily average of the total volume reported reported to the Commission on the weekly volume reports through November 18, 2015.
- Six to ten miles (6-10 miles):
 - Maintain current levels at this time. This letter shall serve as notification that future seismic activity might result in an expanded area for reductions to include these wells.

If you have any questions contact the OGCD:

Charles Lord
(405) 522-2751

or

Jim Marlatt
(405) 522-2758

c.lord@occemail.com

j.marlatt@occemail.com

Thank you in advance for your continued cooperation and attention to this matter.

Sincerely,



Tim Baker, Director
Oil and Gas Conservation Division

The wells in this area operated by your company, and the volume reduction schedule are listed below:

[illegible]

